IN THE CLAIMS

What is claimed is:

1 1. A computer software product having one or more recordable medium having
2 executable instructions stored thereon which, when executed by a processing
3 device, causes the processing device to:
4   generate, from a first property, a first assumption including a first state
5 predicate;
6   generate, for a model, a first transition relation that includes the first state
7 predicate; and
8   reduce the first transition relation according to the first assumption.

1 2. The computer software product recited in Claim 1 wherein reducing the first
2 transition relation reduces the size of the model.

1 3. The computer software product recited in Claim 1 wherein reducing the first
2 transition relation reduces the computational complexity of evaluating the first
3 property.

1 4. The computer software product recited in Claim 1 wherein reducing the first
2 transition relation reduces the number of variables in the model.

1 5. The computer software product recited in Claim 1 wherein reducing the first
2 transition relation reduces the number of variables in the first transition
3 relation.

1 6. The computer software product recited in Claim 1 wherein the first
2 assumption is generated from an implication structure of the first property.

1   7. The computer software product recited in Claim 6 which, when executed by a

2   processing device, further causes the processing device to:

3   propagate the first assumption to generate a second assumption

4   according to a second property.

1   8. The computer software product recited in Claim 7 wherein the second

2   property is a sub-property of the first property.

1   9. The computer software product recited in Claim 7 wherein the second

2   property is to be evaluated under the first assumption.

1   10. The computer software product recited in Claim 7 wherein the first

2   assumption is propagated only one transition stage to generate the second

3   assumption.

1   11. A verification system comprising:

2   means for producing, from a first property, a first assumption including a

3   first state predicate; and

4   means for producing a reduced next state function from a first next state

5   function involving the first state predicate by applying the first assumption.

1   12. The verification system of Claim 11 wherein the first assumption is produced

2   from the structure of the first property.

1   13. The verification system of Claim 12 further comprising:

2   means for propagating the first assumption according to a second

3   property to generate a second assumption; and

4   means for producing, for a model, a transition relation that includes the

5   reduced next state function.

1   14. The verification system of Claim 13 wherein the second property is a sub-

2   property of the first property.

1   15. The verification system of Claim 14 wherein the first assumption is

2   propagated only one transition stage to generate the second assumption.

1   16. A verification system comprising:

2   a recordable medium to store executable instructions;

3   a processing device to execute executable instruction; and

4   a plurality of executable instructions to cause the processing device to:

5   produce, from a first property, a first assumption including a first state

6   predicate;

7   produce, for a model, a first transition relation that includes the first state

8   predicate; and

9   reduce the first transition relation according to the first assumption.

1   17. The verification system of Claim 16 wherein the first assumption is produced

2   from the logical structure of the first property.

1   18. The verification system recited in Claim 17, the plurality of executable

2   instructions further comprising instructions to cause the processing device to:

3   propagate the first assumption to generate a second assumption

4   according to a second state predicate.

1   19. The computer software product recited in Claim 18 wherein the second

2   property is a sub-property of the first property.